

# Notice of Allowability

Application No.

10/690,636

Examiner

Bumsuk Won

Applicant(s)

TSAI ET AL.

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 3/28/2006.
2. ☒ The allowed claim(s) is/are 1-7 and 9-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

DETAILED ACTION

*Allowable Subject Matter*

Claims 1-7 and 9-11 are allowed. The following is an examiner's statement of reasons for allowance: The instant application is deemed to be directed to a nonobvious improvement over the inventions of Lee (US 2004/0183437), Bulovic (US 5,834,893) and Sugiura (2004/0012980). In particular, the improvement provides a top emission organic light emitting display to have a rough contact surface between an electrode and a reflecting layer in order to reduce of color shift with a wide viewing angle, in each of the independent claims 1 and 7.

Regarding independent claim 1, Tsai claims a top emission OLED comprising: a substrate with a TFT; a reflective layer on the substrate; a first electrode on the reflective layer; a rough contact surface between the reflective layer and the first electrode for reducing color shift with a wide viewing angle; an organic layer on the first electrode; and a transparent second electrode.

Regarding independent claim 7, Tsai claims same as claim 1 except having a polarization layer being disposed between TFT and the reflective layer.

Lee discloses an electroluminescent device (figure 3D) having a substrate (31), a polysilicon or a tungsten layer (33a, paragraph 38), a reflective metal

electrode layer (33b), a light emitting layer (37), and a transparent electrode layer (39); wherein there is a rough surface between the polysilicon or the tungsten layer and the reflective metal electrode layer. However, Lee fails to teach or suggest the polysilicon or the tungsten layer is a reflective layer.

Sugiura discloses an OLED having a substrate (figure 5, 1), a light scattering layer (14, reflective layer), a first transparent electrode (15), a light emitting layer (4), and a second transparent electrode (5), wherein there is a rough surface between the light scattering layer and the first transparent electrode. However, Sugiura fails to teach or suggest the rough surface exist directly contacting between the first electrode and the light scattering layer.

Bulovic discloses an OLED having a substrate (figure 3G, 21), a cathode (22), an organic light emitting layer (23) and three transparent anodes (24a, 24b, 24c), wherein there is a rough surface between the cathode and the substrate. However, Bulovic fails to teach or suggest the substrate is reflective layer.

The prior arts, Lee, Bulovic and Sugiura either taken singly or in combination fails to anticipate or fairly suggest the limitations of applicant's independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103

would be proper. The claimed invention is therefore considered to be in condition for allowance as being novel and nonobvious over prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Response to Arguments*

Applicant's arguments, see pages 2-3, filed on 3/28/2006, with respect to claims 1-3 and 6 have been fully considered and are persuasive.

Regarding the contact surface between the reflective layer and the first electrode being a rough surface in the independent claims 1 and 7, the Examiner agrees with Applicant that Sugiura does not teach or suggest having a contact surface between the reflective layer and the first electrode being a rough surface.

The rejection under 35 U.S.C. 102 of claims 1-3 and 6 has been withdrawn.

The rejection under 35 U.S.C. 103 of claims 4 and 5 has been withdrawn due to their claim dependency.

The rejection under 35 U.S.C. 103 of claim 7 has been withdrawn due to same reason as claim 1.

The rejection under 35 U.S.C. 103 of claims 9-11 has been withdrawn due to their claim dependency.

*Contact information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bumsuk Won  
Patent Examiner



**JOSEPH WILLIAMS**  
**PRIMARY EXAMINER**